

IN THE DRAWINGS:

FIG. 7 has been corrected as shown in the Replacement Drawing Sheet and as shown in red in the Annotated Sheet Showing Changes in the attached Appendix.

FIG. 10A has been corrected as shown in the Replacement Drawing Sheet and as shown in red in the Annotated Sheet Showing Changes in the attached Appendix.

FIG. 29A has been corrected as shown in the Replacement Drawing Sheet and as shown in red in the Annotated Sheet Showing Changes in the attached Appendix.

REMARKS

This Amendment is submitted in response to the Office Action dated February 9, 2006 and the Office Communication dated July 7, 2006. In the Office Action, the Patent Office objected to Claim 69 under 37 CFR §1.75 as being a substantial duplicate of Claim 67. Additionally, the Patent Office objected to the disclosure for informalities. Further, the Patent Office rejected Claims 8-13 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Still further, the Patent Office rejected Claims 1, 2, 4, 8-11, 14, 17, 19, 21-30, 33, 34, 37-40, 47, 50-55 78, 79, 81, 83, 84, 87-90, 103-106, 109 and 112-115 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,876,199 to *Bergersen* (hereinafter "the '199 patent"); rejected Claims 1 and 3 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,139,944 to *Bergersen* (hereinafter "the '944 patent"); rejected Claims 1, 5, 6 and 14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,073,061 to *Bergersen* (hereinafter "the '061 patent"); rejected Claims 40, 43, 44, 47, 52, 78, 79, 81, 86 and 111 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,211,559 to *Hart et al.*; rejected Claim 47 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,129,084 to *Bergersen* (hereinafter

"the '084 patent"); rejected Claims 56-62 and 64 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,898,535 to *Bergersen* (hereinafter "the '535 patent"); rejected Claims 65, 67-69, 72, 74, 92-94, 97, 99, 101 and 102 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,742,075 to *Kesling*; and rejected Claims 65-69 and 71 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,536,168 to *Bourke*.

Moreover, the Patent Office rejected Claim 7 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of U.S. Patent No. 5,328,362 to *Watson*; rejected Claims 12, 35, 36, 41, 42, 85, 91-97, 101, 102, 110 and 116 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of *Kesling*; rejected Claims 16 and 75 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of U.S. Patent No. 5,779,470 to *Kussick*; and rejected Claims 20, 77, 80 and 82 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of U.S. Patent No. 4,983,334 to *Adell*.

Furthermore, the Patent Office rejected Claims 31 and 32 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of U.S. Patent No. 5,536,168 to *Bourke*; rejected Claims 45, 46 and 107 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of the '061 patent; rejected Claim 49 under 35 U.S.C. §103(a) as being unpatentable over the '084 patent in view of the '535 patent; rejected Claim 63 under 35 U.S.C. §103(a) as being unpatentable over the '535 patent in view of the '199 patent;

rejected Claim 70 under 35 U.S.C. §103(a) as being unpatentable over Kesling in view of the '199 patent; and rejected Claims 92-95, 98 and 100 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of U.S. Patent No. 4,330,272 to Bergersen (hereinafter "the '272 patent").

Applicant notes with appreciation that the Patent Office indicated that Claim 15, 18, 48, 73, 76 and 108 would be allowable if rewritten in independent form. Accordingly, Applicant added Claim 117 which incorporates the limitations of Claim 15 into Claim 14; added Claim 118 which incorporates the limitations of Claim 18 into Claim 14; added Claim 119 which incorporates the limitations of Claim 48 into Claim 47; added Claim 120 which incorporates the limitations of Claim 73 into Claim 65; added Claim 121 which incorporates Claim 76 into Claim 14; and added Claim 122 which incorporates Claim 108 into Claim 103.

With respect to the objection to the disclosure for informalities, Applicant amended the specification and corrected FIGS. 7, 10A and 29A to overcome the objections by the Patent Office. Notice to that effect is requested.

In the Office Action, the Patent Office asserts:

Reference numeral 104 refers to a lower shell (page 40, line 18) and an upper incisor (page 40, line 27). Reference numeral 190 refers to spikes (page 38, line 31) and an appliance (page 40, line 33). Reference numeral 329 refers to sockets (page 53, line 31) and a front section (page 54, line 5). Reference 317 refers to sockets (page 54, line 7) and upper front teeth (page 54, line 7).

On page 38 in the specification, Applicant amended the last paragraph to replace the reference sign "190" with the reference sign "606" to identify the spikes of the dental appliance 60. On page 40, Applicant amended the last paragraph to replace the reference sign "104" with the reference sign "604" to identify an upper incisor as illustrated in FIG. 10A. On page 54, Applicant amended the first full paragraph to replace the reference sign "329" with the reference sign "608" to identify the front section as illustrated in FIG. 29A. Also on page 54, Applicant amended the second full paragraph to remove the reference sign "317" from identifying the upper front teeth which are not shown in the figures.

Applicant also submits herewith corrections to FIGS. 7, 10A and 29A to replace the reference sign "190" with the reference sign "606" to identify the spikes 606, to replace the reference sign "104" with the reference sign "604" to identify an upper incisor 604 and to replace the reference sign "329" with the reference sign "608", respectively, as shown in the Replacement Drawings Sheets and as shown in red in the Annotated Sheets Showing Changes in the attached Appendix.

By the present Amendment, Applicant amended Claims 1, 8, 14, 21, 30, 40, 47, 56, 65, 69, 78, 87, 92, 103 and 112 and added new Claims 117-122. Applicant submits that the amendments to the drawings, the specification and the claims overcome the objections and rejections by the Patent Office and place the application in

condition for allowance. Notice to that effect is respectfully requested.

With respect to the objection of Claim 69 under 37 CFR §1.75 as being a substantial duplicate of Claim 67, Applicant respectfully submits that the objection has been overcome by the amendment to Claim 69 and for the reasons that follow.

Claim 69, as amended, defines a dental appliance having a projection which is positioned on a buccal surface of the user and a lingual surface of the user so as to be adjacent to a molar when the base is worn.

Accordingly, the objection of Claim 69 under 37 CFR §1.75 has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 8-13 under 35 U.S.C. §112, first paragraph, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 8 and for the reasons that follow.

In the Office Action, the Patent Office asserts:

The specification, as originally filed, does not provide support for the hinge being sized to contact a molar furthest rearward in a mouth of a user to control eruption of the molar.

Independent Claim 8, as amended, defines a dental appliance having a hinge connecting the upper base and the lower base wherein the hinge is sized to fit into a rear portion of the upper base and the lower base wherein a front section of the upper base separates

from a front section of the lower base via the hinge.

Accordingly, the rejection of Claims 8-13 under 35 U.S.C. §112, first paragraph, has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 1, 2, 4, 8-11, 14, 17, 19, 21-30, 33, 34, 37-40, 47, 50-55, 78, 79, 81, 83, 84, 87-90, 103-106, 109 and 112-115 under 35 U.S.C. §102(b) as being anticipated by the '199 patent, Applicant submits that the rejection has been overcome in view of the foregoing amendments to the claims and the remarks that follow.

More specifically, the Patent Office states:

Bergersen '199 shows a dental appliance 210 comprising a generally U-shaped upper base 214, a generally U-shaped lower base 216 having an occlusal surface wherein the occlusal surface contact the teeth when the base is worn wherein the base has a thickness defined between a first end and a second end wherein the occlusal surface contacts each molar when the base is worn to prevent the molar from achieving a malocclusion position. As to claims 2, 8 and 17, note the hinge 212 connected to the base. The hinge contacts a molar furthest rearward in the mouth. As to claims 11, 33, 34, 78, 79, 81, 88, 89, 109, 113, 114, note the socket or slot which is sized to fit at least two teeth. As to claim 19, 29, 52, note that the upper base and contacting the front of the mouth. As to claims 21, 30, 40, the method by which the appliance is designed is not given patentable weight in the apparatus claim because the method does not result in an application that is structurally different than the appliance of *Bergersen*.

Independent Claim 1, as amended, requires a dental appliance having a top portion and a bottom portion connected via a hinge. Further, Claim 1 requires a slot is formed in the generally U-shaped base wherein the last molar is inserted into the slot and further

wherein the first end and the second end extend beyond the last molar to a point further rearward into the mouth of the user than the last molar.

Independent Claim 8, as amended, requires a dental appliance having an upper base and a lower base which are made from a first material. Further, Claim 8 requires a hinge which is made from a second material wherein the second material is harder than the first material.

Independent Claim 14, as amended, requires a dental appliance having a concaved portion which is formed in the upper base wherein the concaved portion moves the tongue to an elevated position with respect to the lower teeth of the user.

Independent Claim 21, as amended, requires a dental appliance having a concaved portion which is formed on the upper base wherein the concave portion moves the tongue of the user outward with respect to the lower arch of the user wherein the upper base widens the upper arch of the user.

Independent Claim 30, as amended, requires a dental appliance having a lower base which has a spike formed on a lingual surface wherein the tongue of the user is prevent from moving inward with respect to the lower base by the spike on the lingual surface of the lower base.

Independent Claim 40, as amended, requires a dental appliance having an upper base which has a first arch width corresponding to the upper arch of the user and a lower base which has a second arch

width corresponding to the lower arch of the user wherein the second arch width of the lower base is greater than or less than the first arch width of the upper base.

Independent Claim 47, as amended, requires a dental appliance having holes which are formed in the hinge wherein the hinge is attached to the upper base and the lower base via the holes of the hinge.

Independent Claim 78, as amended, requires a dental appliance having an upper base which has a first arch width defined between a first end of the upper base and a second end of the upper base and a lower base which has a second arch width defined between a first end of the lower base and the second end of the lower base wherein the second arch width of the lower base is greater than or is less than the first arch width of the upper base.

Independent Claim 87, as amended, requires a dental appliance having a cavity which moves the tongue to an elevated position with respect to the lower arch of the user wherein the elevated position of the tongue expands the upper arch of the user.

Independent Claim 103, as amended, requires a dental appliance having a generally U-shaped upper base which has a hinge connected to the lower base wherein the upper base has a lingual surface extending outwardly with respect to the upper arch of the user wherein the lingual surface has a projection or a rib formed wherein the projection or the rib extends inwardly with respect to the lower arch of the user wherein the projection or the rib corrects thumb

sucking of the patient.

Independent Claim 112, as amended, requires a dental appliance having a cavity which moves the tongue outwardly with respect to the lower base.

On the contrary, the '199 patent teaches an orthodontic appliance for assisting in properly positioning teeth within the mouth of an individual which has a labial-buccal flange, a lingual flange spaced from the labial-buccal flange, both of which define a generally U-shaped configuration in the occlusal view, and an isthmus interconnecting the two flanges. The appliance has no individual tooth sockets but instead utilizes pressure applied by the labial-buccal flange, the lingual flange, and relative angles and material thicknesses to properly position the teeth. The appliance is capable of fitting mouths and teeth of various sizes because it includes no individual tooth sockets.

Nowhere does the '199 patent teach or suggest a dental appliance having a slot which is formed in the generally U-shaped base wherein the last molar is inserted into the slot and further wherein the first end and the second end extend beyond the last molar to a point further rearward into the mouth of the user than the last molar as required by Claim 1. Additionally, nowhere does the '199 patent teach or suggest a dental appliance having the upper base and the lower base which are made from a first material and the hinge is made from a second material wherein the second material is harder than the first material as required by Claim 8. Further,

nowhere does the '199 patent teach or suggest a dental appliance having a concaved portion which is formed in the upper base wherein the concaved portion moves the tongue to an elevated position with respect to the lower teeth of the user as required by Claim 14. Still further, nowhere does the '199 patent teach or suggest a dental appliance having a concaved portion which is formed on the upper base wherein the concave portion moves the tongue of the user outward with respect to the lower arch of the user wherein the upper base widens the upper arch of the user as required by Claim 21.

Moreover, nowhere does the '199 patent teach or suggest a dental appliance having a lower base which has a spike formed on a lingual surface wherein the tongue of the user is prevent from moving inward with respect to the lower base by the spike on the lingual surface of the lower base as required by Claim 30. Furthermore, nowhere does the '199 patent teach or suggest a dental appliance having the upper base which has a first arch width corresponding to the upper arch of the user and a lower base which has a second arch width corresponding to the lower arch of the user wherein the second arch width of the lower base is greater than or less than the first arch width of the upper base as required by Claim 40.

Nowhere does the '199 patent teach or suggest a dental appliance having a hinge attaching the upper base to the lower base wherein holes are formed in the hinge wherein the hinge is attached to the upper base and the lower base via the holes of the hinge as required by Claim 47.

Additionally, nowhere does the '199 patent teach or suggest a dental appliance having an upper base which has a first arch width defined between a first end of the upper base and a second end of the upper base and a lower base which has a second arch width defined between a first end of the lower base and the second end of the lower base wherein the second arch width of the lower base is greater than or is less than the first arch width of the upper base as required by Claim 78. Further, nowhere does the '199 patent teach or suggest a dental appliance having a cavity formed within the upper base and the lower base wherein the cavity is sized to receive a tongue of the user wherein the cavity moves the tongue to an elevated position with respect to the lower arch of the user wherein the elevated position of the tongue expands the upper arch of the user as required by Claim 87.

Still further, nowhere does the '199 patent teach or suggest a dental appliance having the upper base which has a lingual surface extending outwardly with respect to the upper arch of the user wherein the lingual surface has a projection or a rib formed wherein the projection or the rib extends inwardly with respect to the lower arch of the user wherein the projection or the rib corrects thumb sucking of the patient as required by Claim 103. Moreover, nowhere does the '199 patent teach or suggest a cavity formed within the upper base or the lower base wherein the cavity is sized to receive a tongue of the user wherein the cavity moves the tongue outwardly with respect to the lower base as required by Claim 112.

Under 35 U.S.C. §102(b), anticipation requires that a single reference discloses each and every element of Applicant's claimed invention. *Akzo N.V. v. U.S. International Trade Commission*, 808 F.2d 1471, 1479, 1 USPQ 2d. 1241, 1245 (Fed. Cir. 1986). Moreover, anticipation is not shown even if the differences between the claims and the reference are "insubstantial", and one skilled in the art could supply the missing elements. *Structure Rubber Products Co. v. Park Rubber Co.*, 749 F.2d. 707, 716, 223 USPQ 1264, 1270 (Fed. Cir. 1984).

Since the '199 patent fails to disclose a dental appliance as defined in Claims 1, 8, 14, 21, 30, 40, 47, 78, 87, 103 and 112, Applicant asserts that the rejection of Claims 1, 2, 4, 8-11, 14, 17, 19, 21-30, 33, 34, 37-40, 47, 50-55, 78, 79, 81, 83, 84, 87-90, 103-106, 109 and 112-115 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 1 and 3 under 35 U.S.C. §102(b) as being anticipated by the '944 patent, Applicant submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Bergersen '944 shows a dental appliance 20 comprising a generally U-shaped upper base 22, a generally U-shaped lower base 24 having an occlusal surface contacts the teeth when the base is worn wherein the base has a thickness defined between a first end and a second end wherein the occlusal surface contact each molar when the base is worn to prevent the molar from achieving a malocclusion position. The appliance is made of a transparent material (column 6, lines 25-27).

The '944 patent merely teaches a method and an orthodontic positioner for preventing or correcting overbite and/or overjet at a mixed dentition stage for a patient having permanent incisors and lost, unreplaced canine and deciduous molar teeth. A positioner essentially of a size for a person having incisors the same size as that of the patient but with a full set of permanent teeth is trimmed back posteriorly and along the gingival margins to fit in the patient's mouth without abrading the labial-buccal gum surfaces.

Nowhere does the '944 patent teach or suggest a dental appliance having a generally U-shaped base which has a top portion and a bottom portion connected via a hinge as required by Claim 1.

On the contrary, the '944 patent merely teaches that "the sides of the troughs 22 and 24 are bounded by lingual flange 26 which covers the rear of the teeth of the upper and lower arch and a labial-buccal flange 28 which cover the front of the teeth of both arches." Therefore, the '944 patent does not teach an dental appliance as required by Claim 1, as amended.

Since the '944 patent fails to disclose an orthodontic appliance as specifically defined in Claim 1, Applicant asserts that the rejection of Claims 1 and 3 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 1, 5, 6 and 14 under 35 U.S.C. §102(b) as being anticipated by the '061 patent, Applicant

submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Bergersen '061 shows a dental appliance 10 comprising a generally U-shaped upper base, a generally U-shaped lower base having an occlusal surface wherein the occlusal surface contacts the teeth when the base is worn wherein the base has a thickness defined between a first end and a second end wherein the occlusal surface contacts each molar when the base is worn to prevent the molar from achieving a malocclusion position.

The '061 patent merely teaches an orthodontic appliance closely adapted to a patient's teeth for holding the same securely in place and a method for forming the same having a preformed trough formed between a labial-buccal flange and a lingual flange. The orthodontic appliance is formed of a material which is essentially non-resilient but becoming soft for non-elastic reshaping at a temperature above body temperature and below 212 degree F. The preform is heated and when soft it is placed within the patient's mouth and reshaped to precisely the contour of at least some if not all of the teeth of the row to which it is applied. The appliance is then cooled, preferably while still in the patient's mouth, after which the flanges are preferably trimmed back to the gum line.

Nowhere does the '061 patent teach or suggest a dental appliance having a generally U-shaped base which has a top portion and a bottom portion connected via a hinge as required by Claim 1. Nowhere does the '061 patent teach or suggest a dental appliance having a concaved portion which is formed in the upper base wherein

the concaved portion moves the tongue to an elevated position with respect to the lower teeth of the user as required by Claim 14.

Since the '061 patent fails to disclose an dental appliance as specifically defined in Claims 1 and 14, Applicant asserts that the rejection of Claims 1, 5, 6 and 14 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 40, 43, 44, 47, 52, 78, 79, 81, 86 and 111 under 35 U.S.C. §102(b) as being anticipated by *Hart et al.*, Applicant submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Hart et al. show a dental appliance comprising a generally U-shaped upper base 6, a generally U-shaped lower base 8, and a hinge 10, 14 attaching the bases together. The method by which the appliance is designed is not given patentable weight in the apparatus claim because the method does not result in an appliance that is structurally different than the appliance of *Hart*.

Hart et al. merely teach a gel tray for holding a medicament to be applied to the teeth and gums of a patient having a handle and an opposing buckle. The handle has a tongue reception groove extending transverse to its length at a position such that the tongue reception groove is engaged by the tongue when the tray is folded. Slotted tabs are interfitted when the tray is folded for securely maintaining the tray in the folded state. The tray can be combined with or preloaded with a treatment agent such as a gel having a pharmaceutically effective amount of at least one agent for

treating teeth or gums dispersed in a gel medium which may consist of water and an amount of a water dispersible gelling agent sufficient to form a gel. Preferably, the treatment gel has an agent such as from 0.05 to 5 wt. % of a soluble fluoride, either in an acidic gel or a neutral gel.

Nowhere do *Hart et al.* teach or suggest a dental appliance having an upper base which has a first arch width corresponding to the upper arch of the user and a lower base which has a second arch width corresponding to the lower arch of the user wherein the second arch width of the lower base is greater than or less than the first arch width of the upper base as required by Claim 40. Nowhere do *Hart et al.* teach or suggest a dental appliance having a hinge attaching the upper base to the lower base wherein holes are formed in the hinge wherein the hinge is attached to the upper base and the lower base via the holes of the hinge as required Claim 47. Nowhere do *Hart et al.* teach or suggest a dental appliance having an upper base which has a first arch width defined between a first end of the upper base and a second end of the upper base and a lower base which has a second arch width defined between a first end of the lower base and the second end of the lower base wherein the second arch width of the lower base is greater than or is less than the first arch width of the upper base as required by Claim 78.

Since *Hart et al.* fail to disclose a dental appliance as specifically defined in Claims 40, 47 and 78, Applicant asserts that the rejection of Claims 40, 43, 44, 47, 52, 78, 79, 81, 86 and 111

under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claim 47 under 35 U.S.C. §102(b) as being anticipated by the '084 patent, Applicant submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Bergersen '084 shows a dental appliance comprising a generally U-shaped upper base 10, a generally U-shaped lower base 20, and a hinge 34 attaching the bases together. The bases are sized to fit users of various types dentitions.

The '084 patent merely teaches an intra-oral appliance for repositioning the user's mandible anterior to the user's maxillary teeth thus opening the user's oral passageway and pharyngeal passageway to prevent snoring and sleep apnea. The appliance is two U-shaped plates joined to form a hinge having an upper plate with a labial-buccal wall but no lingual wall, which allows anterior positioning of the tongue. A lower plate has both a labial-buccal wall and a lingual wall. The walls are pliable to reduce pressure on the user's teeth and vary in height and thickness.

Nowhere does the '084 patent teach or suggest a dental appliance having a hinge attaching the upper base to the lower base wherein holes are formed in the hinge wherein the hinge is attached to the upper base and the lower base via the holes of the hinge as required by Claim 47.

Since the '084 patent fails to disclose an orthodontic

appliance as specifically defined in Claims 47, Applicant asserts that the rejection of Claims 47 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 56-62 and 64 under 35 U.S.C. §102(b) as being anticipated by the '535 patent, Applicant submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Bergersen '535 shows a dental appliance comprising an upper base, a lower base, and a hinge 44 which, since the bases are molded around the hinges, are inherently inserted into cavities in the bases.

Independent Claim 56, as amended requires a dental appliance having a lower base which has a lingual surface wherein a spike is formed on the lingual surface of the lower base wherein the spike contacts the tongue of the user.

The '535 patent merely teaches a removable orthodontic appliance with a means for retaining the appliance within the user's mouth. The appliance has an upper tooth receiving trough and lower tooth receiving trough which are separated at an anterior end and connect at a posterior end by a resilient hinge which biases the appliance into an open position with the two trough anterior ends urged apart. Such an appliance can be manufactured by slitting the appliance after molding, before it has cooled, to thermoset the hinge in an open position or by molding the appliance in an open

position.

Nowhere does the '535 patent teach or suggest a dental appliance having a lower base which has a lingual surface wherein a spike is formed on the lingual surface of the lower base wherein the spike contacts the tongue of the user as required by Claim 56.

Since the '535 patent fails to disclose an dental appliance as specifically defined in Claim 65, Applicant asserts that the rejection of Claims 56-62 and 64 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 65, 67-69, 72, 74, 92-94, 97, 99, 101 and 102 under 35 U.S.C. §102(b) as being anticipated by *Kesling*, Applicant submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Kesling shows a dental appliance 20 comprising a generally U-shaped base 21 having an occlusal surface wherein the occlusal surface has a rib 35 that rotates teeth (column 4, lines 6-20). As to claims 72 and 92, note the wire (attachment) 40 embedded in the base.

Independent Claim 65, as amended, requires a dental appliance having a slot that receives teeth of the user wherein the slot is formed from a flat occlusal surface having walls extending outward with respect to the flat occlusal surface wherein one of the walls of the slot has a projection or a rib formed wherein a cavity is formed in the generally U-shaped base wherein the cavity moves the tongue of the user.

Independent Claim 92, as amended, requires a dental appliance having a hinge which has a length defined between a first end and a second end wherein the hinge connects the upper base and the lower base wherein the first end of the hinge inserts into the upper base and further wherein the second end of the hinge inserts into the lower base.

Kesling merely teaches an orthodontic appliance for use in the final stages of orthodontic treatment to ideally position and retain teeth, which comprises an arch-shaped body of resilient material having upper and lower archways for receiving the upper and lower arches of a patient. The appliance is premolded in several sizes, and the seating springs are custom fitted to the patient's arches in a short period of time by the orthodontist.

Nowhere does *Kesling* teach or suggest a dental appliance having a slot that receives teeth of the user wherein the slot is formed from a flat occlusal surface having walls extending outward with respect to the flat occlusal surface wherein one of the walls of the slot has a projection or a rib formed as required by Claim 65. Nowhere does *Kesling* teach or suggest a dental appliance having a hinge which has a length defined between a first end and a second end wherein the hinge connects the upper base and the lower base wherein the first end of the hinge inserts into the upper base and further wherein the second end of the hinge inserts into the lower base as required by Claim 92.

Since *Kesling* fails to disclose an dental appliance as

specifically defined in Claims 65 and 92, Applicant asserts that the rejection of Claims 65, 67-69, 72, 74, 92-94, 97, 99, 101 and 102 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 65-69 and 71 under 35 U.S.C. §102(b) as being anticipated by *Bourke*, Applicant submits that the rejection has been overcome in view of the foregoing amendments and the remarks that follow.

More specifically, the Patent Office states:

Bourke shows a dental appliance 10 comprising a generally U-shaped base having an occlusal surface wherein the occlusal surface has a projection 18 that exerts a force on teeth. The projections are adjacent an incisor or a molar. The occlusal surfaces are considered to be roughened by virtue of the projections.

Bourke merely teaches a mouth worn apparatus having a main body having upper compartments and lower compartments which are generally U-shaped so as to conform generally to a patient's teeth, the upper compartment opening at least upwardly and the lower compartment opening at least downwardly so as to generally receive a patient's upper teeth and lower teeth. A plurality of flexible protrusion members extend from at least part of the interior surface of at least one of the compartments so as to contact at least some of the patient's teeth when the device is worn.

Nowhere does *Bourke* teach or suggest a dental appliance having a cavity which is formed in the generally U-shaped base wherein the cavity moves the tongue of the user as required by Claim 65.

Since *Bourke* fails to disclose a dental appliance as specifically defined in Claim 65, Applicant asserts that the rejection of Claims 65-69 and 71 under 35 U.S.C. §102(b) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 12, 35, 36, 41, 42, 85, 91-97, 99, 101, 102, 110 and 116 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of *Kesling*, Applicant respectfully submits that the rejection has been overcome by the amendment to the claims and for the reasons that follow.

In the Office Action, the Patent Office alleges:

Bergersen '199 does not include ribs formed in the bases. *Kesling* shows a dental appliance having ribs 35 formed in the base to assist in the maintaining the proper orientation of the teeth. The bases of *Kesling* also include an attachment (hook or clasp) 40 therein.

Neither the '199 patent nor *Kesling*, taken singly or in combination, teaches or suggests a dental appliance having a hinge which has a length defined between a first end and a second end wherein the hinge connects the upper base and the lower base wherein the first end of the hinge inserts into the upper base and further wherein the second end of the hinge inserts into the lower base as required by Claim 92.

Moreover, a person of ordinary skill in the art would never have been motivated to combine the teachings of the '199 patent with *Kesling* in the manner suggested by the Patent Office in formulating the rejection under 35 U.S.C. §103(a). It is submitted that the

question under §103 is whether the totality of the art would collectively suggest the claimed invention to one of ordinary skill in this art. *In re Simon*, 461 F.2d 1387, 174 USPQ 114 (CCPA 1972).

That elements, even distinguishing elements, are disclosed in the art is alone insufficient. It is common to find elements somewhere in the art. Moreover, most if not all elements perform their ordained and expected functions. The test is whether the invention as a whole, in light of the teachings of the references in their entireties, would have been obvious to one of ordinary skill in the art at the time the invention was made. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983).

It is insufficient that the art disclosed components of Applicant's invention, either separately or used in other combinations. A teaching, suggestion, or incentive must exist to make the combination made by Applicant. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1988).

With the analysis of the deficiencies of the '199 patent and *Kesling* in mind, as enumerated above, no reason or suggestion in the evidence of record exists why one of ordinary skill in the art would have been led to combine the '199 patent with *Kesling* to produce the claimed invention. Therefore, *prima facie* obviousness has not been established by the Patent Office as required under 35 U.S.C. §103.

Even assuming that one having ordinary skill in the art could somehow have combined the references applied by the Patent Office, the references still lack the novel features positively recited in

independent Claims 8, 30, 40, 78, 92 and 112. Accordingly, the rejection of Claims 12, 35, 36, 41, 42, 85, 91-97, 99, 101, 102, 110 and 116 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 92-95, 98 and 100 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of the '272 patent, Applicant respectfully submits that the rejection has been overcome by the amendment to the claims and for the reasons that follow.

In the Office Action, the Patent Office alleges:

Bergersen '199 does not include an attachment in a base. The bases of *Bergersen* '272 include an attachment (tube) 51, 52 therein in order to attach a headgear to the appliance. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the bases of *Bergersen* [sic] with attachments, as taught by *Bergersen* '272, in order to enable a headgear to be used with the appliance.

Neither the '199 patent nor the '272 patent, taken singly or in combination, teaches or suggests a dental appliance having a hinge which has a length defined between a first end and a second end wherein the hinge connects the upper base and the lower base wherein the first end of the hinge inserts into the upper base and further wherein the second end of the hinge inserts into the lower base as required by Claim 92.

Moreover, a person of ordinary skill in the art would never have been motivated to combine the teachings of the '199 patent with the '272 patent in the manner suggested by the Patent Office in

formulating the rejection under 35 U.S.C. §103(a). Even assuming that one having ordinary skill in the art could somehow have combined the references applied by the Patent Office, the references still lack the novel features positively recited in independent Claim 92. Accordingly, the rejection of Claims 92-95, 98 and 100 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claim 7 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of *Watson*, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 1 and for the reasons that follow.

In the Office Action, the Patent Office alleges:

Bergersen does not disclose that the base is constructed the base is constructed from two different materials wherein one of the material has a greater rigidity than the other. *Watson* shows a dental appliance made of two different materials with one material 14 having a greater rigidity than the other material 16, in order to provide a soft, comfortable appliance that is more rigid sturdy in the occlusal regions.

Claim 7 requires a base which is constructed from a first material and a second material wherein the first material has a lesser degree of rigidity than the second material. On the contrary, *Watson* fails to teach or to suggest the elements of the present invention which are not taught by the '199 patent, taken singly or in combination, as required by amended independent Claim 1 from which Claim 7 depends. Accordingly, the rejection of Claim

7 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 16 and 75 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of *Kussick*, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claims 14 and 65, respectively, and for the reasons that follow.

In the Office Action, the Patent Office alleges:

Bergersen '199 does not include a positioning mark. *Kussick* shows a dental appliance having a reference mark to indicate the proper position for the appliance in the mouth (column 5, lines 51-61).

Claim 16 requires a upper base which is marked to indicate to the user how to position the upper base within the mouth. Claim 75 requires a lower base which is marked to indicate to the user how to position the lower base within the mouth. On the contrary, *Kussick* fails to teach or to suggest the elements of the present invention which are not taught by the '199 patent, taken singly or in combination, as required by amended independent Claims 14 and 65 from which Claims 16 and 75, respectively, depend. Accordingly, the rejection of Claims 16 and 75 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 20, 77, 80 and 82 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of *Adell*, Applicant respectfully submits that the rejection has been

overcome by the amendment to independent Claims 14, 65 and 78, respectively, and for the reasons that follow.

In the Office Action, the Patent Office alleges:

The sockets of *Bergersen* '199 are not customized to the teeth of the user. *Adell* shows a dental appliance wherein the sockets are customized to the teeth of the user.

Claim 20 requires sockets within the upper base wherein the sockets are customized to a shape of the teeth of the user. Claim 77 requires sockets within the lower base wherein the sockets are customized to a shape of the teeth of the user. Claim 80 requires a slot which is customized to receive one or more teeth of the user. Claim 82 requires a socket within the lower base or the upper base wherein the socket is customized to receive one or more teeth of the user. On the contrary, *Adell* fails to teach or to suggest the elements of the present invention which are not taught by the '199 patent, taken singly or in combination, as required by amended independent Claims 14, 65 and 78 from which Claims 20, 77, 80 and 82, respectively, depend. Accordingly, the rejection of Claims 20, 77, 80 and 82 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 31 and 32 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of *Bourke*, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 30 and for the reasons that follow.

In the Office Action, the Patent Office alleges:

The appliance of *Bergersen* '199 does not have a roughened surface. *Bourke* shows a dental appliance wherein the bases have roughened surface (by virtue of prongs 18) in order to facilitate a movement of the teeth.

Claim 31 requires a upper base which has a roughened surface. Claim 32 requires a lower base which has a roughened surface. On the contrary, *Bourke* fails to teach or to suggest the elements of the present invention which are not taught by the '199 patent, taken singly or in combination, as required by amended independent Claim 30 from which Claims 31 and 32, respectively, depend. Accordingly, the rejection of Claims 31 and 32 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 45, 46 and 107 under 35 U.S.C. §103(a) as being unpatentable over the '199 patent in view of the '061 patent, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claims 40 and 103, respectively, and for the reasons that follow.

In the Office Action, the Patent Office alleges:

The dental appliance of *Bergersen* '199 does not include a wire imbedded in one of the bases. *Bergersen* '061 shows a dental appliance of having an upper base and lower base. A wire 40 is embedded in at least one of the bases for engraving and acting of the anterior teeth.

Claim 45 requires a wire embedded within the upper base. Claim 46 requires a wire embedded within the lower base. Claim 107

requires a wire embedded within the base. On the contrary, the '061 patent fails to teach or to suggest the elements of the present invention which are not taught by the '199 patent, taken singly or in combination, as required by amended independent Claims 40 and 103 from which Claims 45, 46 and 107, respectively, depend. Accordingly, the rejection of Claims 45, 46 and 107 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claim 49 under 35 U.S.C. §103(a) as being unpatentable over the '084 patent in view of the '535 patent, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 47 and for the reasons that follow.

In the Office Action, the Patent Office alleges:

Bergersen '084 does not disclose that the hinge is more rigid than the base, and a hinge which may be made of metal (column 3, lines 30-31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the hinge of *Bergersen* '084 of a metal spring piece, as taught by *Bergersen* '535, in order to increase the opening force of the appliance.

Claim 49 requires a hinge which is more rigid than the upper base and the lower base. On the contrary, the '084 patent fails to teach or to suggest the elements of the present invention which are not taught by the '535 patent, taken singly or in combination, as required by amended independent Claim 47 from which Claim 49 depends. Accordingly, the rejection of Claim 49 under 35 U.S.C.

§103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claim 63 under 35 U.S.C. §103(a) as being unpatentable over the '535 patent in view of the '199 patent, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 56 and for the reasons that follow.

In the Office Action, the Patent Office alleges:

The appliance of *Bergersen* '535 does not include lingual tabs. *Bergersen* '199 shows a dental appliance comprising an upper base, a lower base, and a hinge. The appliance includes lingual tabs 46 to keep the mandible moving forward.

Claim 63 requires lingual tabs extending from the lower base. On the contrary, the '199 patent fails to teach or to suggest the elements of the present invention which are not taught by the '535 patent, taken singly or in combination, as required by amended independent Claim 56 from which Claim 63 depends. Accordingly, the rejection of Claim 63 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claim 70 under 35 U.S.C. §103(a) as being unpatentable over *Kesling* in view of the '199 patent, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 65 and for the reasons that follow.

In the Office Action, the Patent Office alleges:

The appliance of *Kesling* does not include lingual tabs. *Bergersen '199* a dental appliance comprising an upper base, a lower base, and a hinge. The appliance includes lingual tabs to keep the mandible moving forward.

Claim 70 requires a lingual tab extending rearward from the base. On the contrary, the '199 patent fails to teach or to suggest the elements of the present invention which are not taught by *Kesling*, taken singly or in combination, as required by amended independent Claim 65 from which Claim 70 depends. Accordingly, the rejection of Claim 70 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claim 70 under 35 U.S.C. §103(a) as being unpatentable over *Kesling* in view of the '199 patent, Applicant respectfully submits that the rejection has been overcome by the amendment to independent Claim 65 and for the reasons that follow.

In the Office Action, the Patent Office alleges:

The appliance of *Kesling* does not include lingual tabs. *Bergersen '199* a dental appliance comprising an upper base, a lower base, and a hinge. The appliance includes lingual tabs to keep the mandible moving forward.

Claim 70 requires a lingual tab extending rearward from the base. On the contrary, the '199 patent fails to teach or to suggest the elements of the present invention which are not taught by *Kesling*, taken singly or in combination, as required by amended independent Claim 65 from which Claim 70 depends. Accordingly, the rejection of Claim 70 under 35 U.S.C. §103(a) has been overcome and

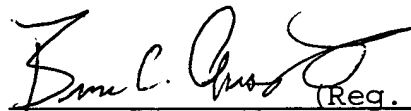
should be withdrawn. Notice to that effect is requested.

Claims 2-7 depend from independent Claim 1; Claims 9-13 depend from independent Claim 8; Claims 15-20 and 75-77 depend from independent Claim 14; Claims 22-29 depend from independent Claim 21; Claims 31-39 depend from independent Claim 30; Claims 41-46 depend from independent Claim 40; Claims 48-55 depend from independent Claim 47; Claims 57- 64 depend from independent Claim 56; Claims 66-74 depend from independent Claim 65; Claims 79-86, 110 and 111 depend from Claim 78; Claims 88-91 depend from independent Claim 87; Claims 93-102 depend from independent Claim 92; Claims 104-109 depend from independent Claim 103; and Claims 113-116 depend from independent Claim 112. These claims are further believed allowable over the references of record for the same reasons set forth with respect to their parent claims since each sets forth additional novel features of Applicant's dental appliance.

In view of the foregoing remarks and amendments, Applicant respectfully submits that all of the claims in the application are in allowable form and that the application is in condition for allowance. If, however, any outstanding issues remain, Applicant urges the Patent Office to telephone Applicant's attorney so that the same may be resolved and the application expedited to issue. Applicant requests the Patent Office to indicate all claims as

allowable and to pass the application to issue.

Respectfully submitted,



(Reg. No. 48,641)

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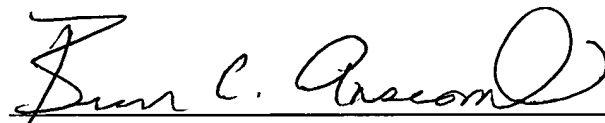
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Attorney for Applicant

CERTIFICATE OF MAILING

I hereby certify that this **Amendment** and **Return Receipt Postcard** are being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 2, 2006.



Brian C. Anscomb (Reg. No. 48,641)



FIG. 7

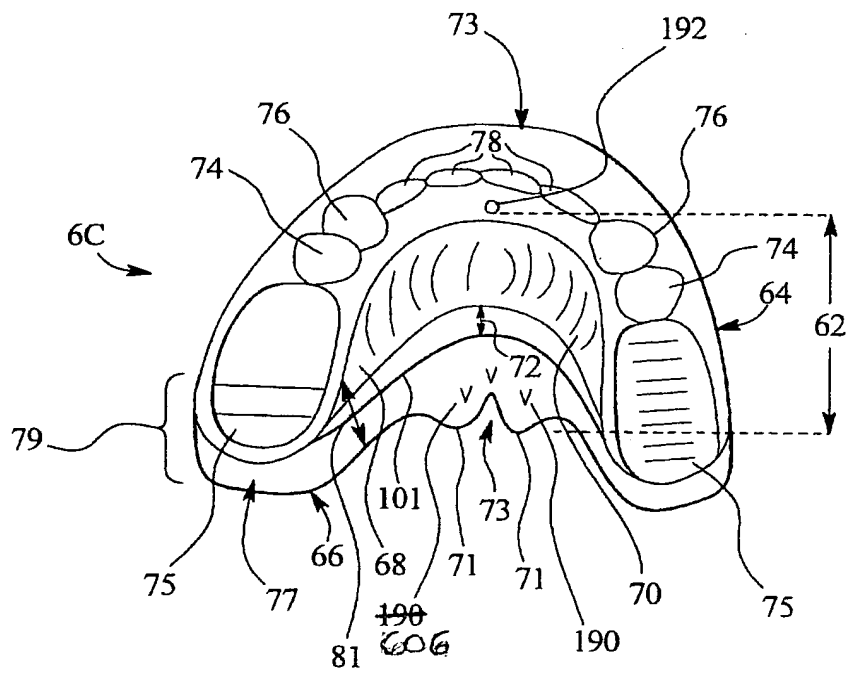


FIG. 10A

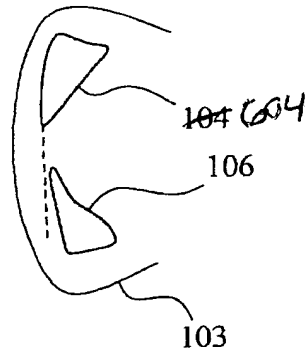


FIG. 10B

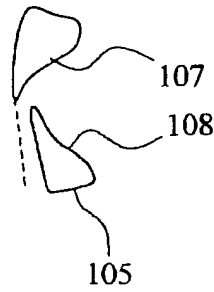


FIG. 10C

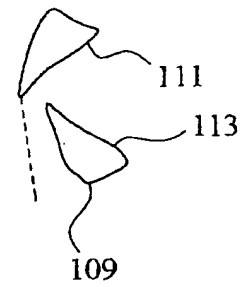


FIG. 10D

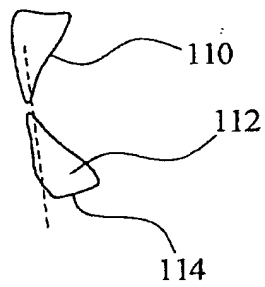


FIG. 10E

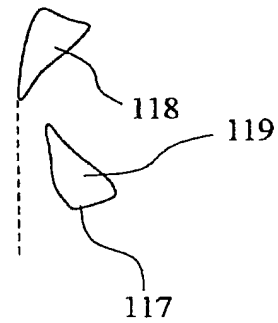


FIG. 28

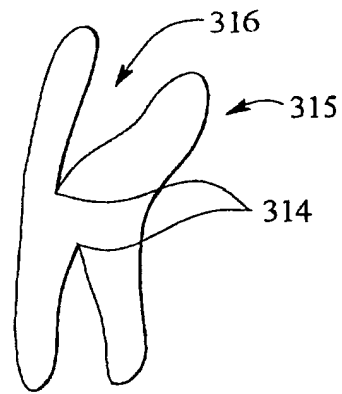


FIG. 29A

